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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/067,567	02/04/2002	John M. Kowalski	SLA.1137	5060
55376	7590	11/10/2005	EXAMINER	
ROBERT D. VARITZ 4915 S.E. 33RD PLACE PORTLAND, OR 97202			SOL, ANTHONY M	
			ART UNIT	PAPER NUMBER
			2662	

DATE MAILED: 11/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/067,567

Applicant(s)

KOWALSKI, JOHN M.

Examiner

Anthony Sol

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– The MAILING DATE of this communication appears on the cover sheet with the correspondence address –  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 04 February 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6-11 is/are rejected.
- 7) ☒ Claim(s) 5 and 12 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 February 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date. _____   | 6) <input type="checkbox"/> Other: _____                                    |

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 4, 6 and 11 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,795,418 B2 ("Choi").

Regarding claim 1 and 6,

Choi shows in Fig. 1, a wireless local area network composed of an access point (AP) and a number of stations (STAs). Choi discloses that the invention comprises a media access control (MAC) protocol for isochronous traffic support (Col. 4, lines 35-37). Choi further discloses an implementation-dependent bandwidth-sharing algorithm utilizing a token passing mechanism to utilize the bandwidth efficiently (Col. 5, lines 7-10; mechanism for governing channel resources). Choi further discloses that the network frame (superframe) starts with a beacon transmission from the AP (transmit specification controller) to all the STAs in the receiving range of the AP, where the beacon includes the information about the time slot allocation (transmit specification) for each STA, synchronization information and information about the AP itself, which is necessary for new STAs to associate with the AP (Col. 4, lines 39-45; claim 1 - a

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mechanism for governing channel resources in the local area network, including a transmit specification controller for granting a transmit specification to a data flow from one station on the network to another station on the network; claim 6 - governing channel resources in the local area network, including controlling transmit specifications for granting a transmit specification to a data flow from one station on the network to another station on the network).

Choi discloses when STA 2 (fig. 3) receives a "virtual" token from STA 1's transmission, e.g., EOF data (TXOP mechanism for terminating transmit opportunities), STA 2 knows from the virtual token that it may utilize the remainder of STA 1's unused time slot. (Col. 5, lines 17-20; claim 1 - a TXOP mechanism for terminating transmits opportunities for stations which have successfully completed data transmission, thereby changing the length of a superframe; claim 6 - terminating transmits opportunities with a TXOP mechanism for stations which have successfully completed data transmission, thereby changing the length of a TXOP).

3. Regarding claim 4 and 11,

Choi discloses a system and method that covers all the limitations of the parent claim.

Choi discloses that when the AP polls STA 2, a sub-portion of STA 1's unused time slot is used for polling, but realized is an availability of an unused portion of STA 1's slot from T2" to T2, as can be seen from the network frame (superframe) of Fig. 4. Choi further discloses that under circumstances where the AP may want to transmit its

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pending data piggybacked by the polling information, the network frame of Fig. 5 shows that this uses a larger amount of polling time resulting in less available transmission time for STA 2 with STA 1's unused slot portion. In other words, the available transmission time varies (expands and contracts) from superframe to superframe (Col.6, lines 28; claim 4 - TXOP mechanism, during successive superframes, expands and contracts the TXOP durations of the stations in the network as a function of completed polling interval relative to the requested polling interval; claim 11 - setting the length of a TXOP having a variable size with a TXOP mechanism, which, during successive superframes, expands and contracts the TXOP durations of the stations in the network as a function of completed polling interval relative to the requested polling interval.

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 2, 3, 7, and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Choi in view of Pub. No. US 2002/0131414 A1 ("Hadzic").

Regarding claims 2, 3, 7, and 8,

Choi discloses a system and method that covers all the limitations of the parent

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claim.

Choi does not disclose a buffer size predictor for predicting the required buffer size as a function of the transmit specification.

Hadzic discloses that a necessary buffer size can be easily determined using techniques such as queuing theory (Pg. 5, para. 42, lines 10-13; claim 2 - a buffer size predictor for predicting the required buffer size as a function of the transmit specification; claim 7 - predicting the required buffer size as a function of the transmit specification and channel conditions). It is inherent that determining the necessary buffer size minimizes buffer size (Claim 3 – the buffer size predictor minimizes buffer size; claim 8 – minimizing the buffer size).

It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention was made to modify bandwidth-sharing algorithm and mechanism of Choi to include a technique such as queuing theory to determine necessary buffer size as disclosed by Hadzic so that the packet lengths can be controlled (Hadzic, pg. 5, para. 42, lines 2-4, 9-10). One skilled in the art would have been motivated to combine Choi with Hadzic (collectively “Choi-Hadzic”) to generate the claimed invention with a reasonable expectation of success.

6. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Choi in view of U.S. Patent No. 6,442,164 B1 (“Wu”).

Choi discloses a method that covers all the limitations of the parent claim.

Choi does not disclose predicting the required buffer size as a function of the expected required throughput.

Wu discloses that after allocation bandwidth has been determined, allocation buffer size, which in at least some circumstances is dependent on the allocation bandwidth, can then be determined (Col. 8, lines 57-60; claim 9 - predicting the required buffer size as a function of the expected required throughput).

It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention was made to modify bandwidth-sharing algorithm and mechanism of Choi to include a method to allocate buffer size dependent on the allocation of bandwidth as taught by Wu to satisfy the local queuing delay requirement (Wu, col. 8, line 36). One skilled in the art would have been motivated to combine Choi with Wu (collectively "Choi-Wu") to generate the claimed invention with a reasonable expectation of success.

7. Claim10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Choi in view of Wu, and in further view of Hadzic.

Choi-Wu discloses a method that covers all the limitations of the parent claim.

Choi-Wu does not explicitly disclose minimizing the buffer size.

Hadzic discloses that a necessary buffer size can be easily determined using techniques such as queuing theory (Pg. 5, para. 42, lines 10-13). It is inherent that

determining the necessary buffer size minimizes buffer size (Claim 10 – minimizing the buffer size).

It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention was made to modify bandwidth-sharing algorithm and mechanism of Choi-Wu to include a technique such as queuing theory to determine necessary minimum buffer size as disclosed by Hadzic so that the packet lengths can be controlled (Hadzic, pg. 5, para. 42, lines 2-4, 9-10). One skilled in the art would have been motivated to combine Choi-Wu with Hadzic (collectively "Choi-Wu-Hadzic") to generate the claimed invention with a reasonable expectation of success.

#### ***Allowable Subject Matter***

8. Claims 5 and 12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anthony Sol whose telephone number is (571) 272-5949. The examiner can normally be reached on M-F 7:30am - 4pm.



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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on (571) 272-3088. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Anthony Sol  
Examiner  
Art Unit 2662



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11/2/2005